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Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

January 1940

Advertising Brochure: Minneapolis Moline Anniversary

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WE USE **M M** OLINE
MINNEAPOLIS
TRACTORS & FARM MACHINERY
dill MI
SEE YOUR M-M DEALER

CELEBRATING
75 YEARS
OF FRIENDLY
SERVICE TO
THE FARMER

To
Farm
with a
Smile

World's Most Modern Line of Tractors and Farm Machinery



MM tractor users are given the benefit of a long and successful tractor designing experience. Minneapolis-Moline has pioneered many of the worthwhile improvements during the last three decades. The Moline Universal with self-starter, electric lights, variable speed governor, etc., introduced in 1915, was the first row crop and general purpose tractor with a complete line of direct attachable and quick detachable implements. Twin City tractors were one of the two first really engineered lines of tractors to appear on the American Market. MM Twin City tractors have been built along the general design now adopted as standard for three years longer than any tractor of modern design still built.

The first tractor to present Visionlined features was MM's Universal "Z", and this feature is now found in all MM tractors. MM Visionlined means best possible seeing on all jobs with COMFORT and SAFETY. You sit in back of the drive wheels comfortably low and yet you have better vision. Minneapolis-Moline was the first to answer the demand of farmers everywhere for greater comfort features in tractors. MM alone offers tractors in both UNIVERSAL and STAND-

ARD MODELS that are regularly equipped with all season Comfort Cabs.

MM tractors are noted for dependability and life, for low fuel and upkeep costs. Proof of the greater dependability of MM tractors has been well established on the Del Monte farms at Rochelle, Illinois, where over 240 MM tractors are in use on one farm over a period of 20 years. "The life of MM tractors can well be measured not by years, but by decades," say leading authorities. Many of the first MM Twin City tractors are still in active use today and are as modern as many models offered by many until a year or so ago. MM tractors have set many power economy records. Only recently the MM model "GT" established a new all time record for power economy in official tests. Compare any MM tractor with any other tractor of its size, feature for feature, and you'll agree that MM tractors are in a class by themselves. Buy any MM tractor now and you'll be sure of having a modern economy tractor for years to come.

MODERN ECONOMY LEADERS IN NINE POPULAR MODELS: 1. Universal "R" with all season Comfort-Cab. 2. Universal "R" without Cab. 3. Universal "Z". 4. Standard "Z". 5. Standard "U". 6. Universal "U". 7. The "GT". 8. UDLX Comforttractor. 9. Standard "R". See Page 9.



75 YEARS OF PIONEERING PROGRESS

75 YEARS AGO IN 1865 the first Moline implements Fanning Mills and Hay Rakes—were built. Moline plows, forerunners of the most famous plow line of all time, were first made in 1866. In 1870 Moline originated and perfected the *first* straddle row cultivator. In 1884 Moline produced the famous Flying Dutchman plow, the *first* three wheeled plow now a universally adopted design. Two years later these PIONEERS introduced the first successful one-man combined check-row and drill planter, named by farmers in the corn belt, the "Champion." Moline-Monitor drills first made in 1871 were the world's first commercially successful grain drills. The first row crop and general purpose tractor was the Moline Universal, introduced in 1915. In a few years 109 of all the tractors on farms were UNIVERSALS.

The Minneapolis Steel and Machinery Company, builders of Twin City tractors, were recognized *Pioneers* of Modern Tractor Design. The Twin City tractor line was one of the first two really engineered lines to appear on the American market. The Minneapolis Threshing Machine Company, builders of the famous Minneapolis Threshers, were *Pioneers* in that they built one of the first successful threshers, which rates as one of the most popular of all time.

In 1929 these three *Pioneer* companies united to become the new and greater Minneapolis-Moline Power Implement Company. MM is steadily living up to the fine traditions of its predecessors. The pioneering spark is ever kept alive by the development of new machines and improvement of the old to meet the farmer's EVERY MODERN NEED. IF YOU BUY A GENUINE MM TRACTOR OR FARM MACHINE, YOU ARE ASSURED OF MORE YEARS OF MODERN PERFORMANCE. MM products are years ahead in design because MM engineers look ahead to give you the WORLD'S MOST MODERN MACHINES.

Bear these facts in mind, as you look through these succeeding pages. Note the IMPROVED outstanding and patented features in EVERY machine in the MM line. Preserve this book for FUTURE REFERENCE.

KEEP A RECORD

THE FARM RECORD pages were put in the MM 1940 Year Book Calendar for your convenience and use, and afford an excellent means of keeping your records. Hang it up in a convenient place. Use it for your daily record as well as a calendar and at the end of the year, as well as from day to day, you'll have a complete record of your transactions. Remember, your farm record will always show greater profits if you use MM quality tractors and machinery.

SEE "THE HEADLINERS"

BE SURE to see the MM free movie "The Headliners" when the opportunity comes. Ask your MM dealer when he will show it. It is an ACTION picture—all in natural color—entertaining as well as educational.



THE ORIGINAL LIGHTWEIGHT HIGH CAPACITY COMBINES

Like other businessmen these days, the farmer has to keep a sharp eye on operating costs to make a profit. Especially is this true in the harvesting of small grains. It may well be that the margin of profit will support all the costs of ordinary harvesting, such as twine, labor and threshing bills, not to mention extra fuel costs, when prices are good and yield is heavy. But not so when prices are low or when yield has been cut by drought or other adverse condition. Even when prices are good you should make the savings that any MM Harvester will assure you of.

Today, modern farmers are looking closely to their margin of profit and are guarding it by using up to date harvesting methods. Thousands of farmers have found that the use of MM Harvestors is the best way to insure a profit for themselves every year. MM Harvester users report almost unbelievable records made in harvesting. Wet ground or dry, clean stands or weedy, upstanding grain or down and tangled, thin and average stands or heavy, all look alike to the MM Harvestors when it comes to fast, clean, trouble-free, low cost harvesting. Reports of $\frac{1}{3}$ gallon of fuel and less per acre in the 12 ft. Harvester are general. Savings of 10 to 12 cents per bushel and \$2.00 and more per acre are general for wheat and correspondingly big for other crops.

MM Harvestors have established new records for economy. They have proved that they can save grain where other methods have failed because of adverse, tough conditions. This year, any year, the MM Harvester way may be the only way you can save your grain. Be prepared for such conditions. In the meantime assure yourself of new low cost harvesting and save a margin of profit for yourself.

Be sure to see the MM Mighty Master 5 ft. Harvester. See pages 35 and 36.



The SENSATIONAL

SETS A NEW STANDARD

UNIVERSAL



They said it couldn't be done, but again Minneapolis-Moline, the Pioneers of Progress, have done it!

The Universal "R" is the first all purpose tractor with Visionlined Comfort-Cab, warm and comfortable in cold or wet weather, well ventilated and refreshing on hot days—GOOD PROTECTION from dust, dirt and weather at all times.

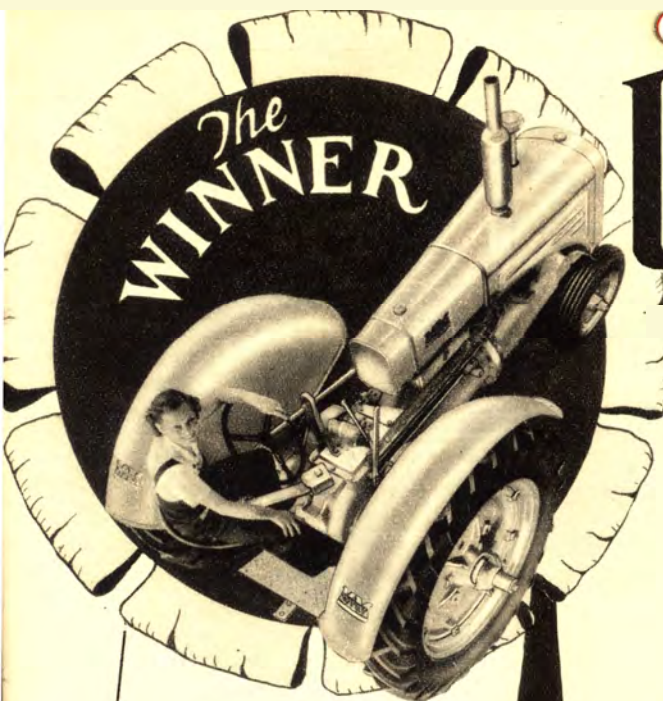
You can buy the "R" with or without the all-season Comfort-Cab. If bought without the cab, it can be purchased later at low cost, and it's easily and quickly put on or removed. Cab is built of steel, making for operator's safety as well as comfort, and vision from the cab at all times is extraordinarily good—the "R" with or without the cab, is Visionlined.

Here are a few of the "R's" features: Steel disc wheels with adjustable tread front and rear—rear tread adjustable at two inch intervals from 52 to 84 inches; rubber tires; two handy brakes used one at a time for extra quick, short turns, or both operated together with one foot for stops; four speeds forward, from 2.3 to 12 M. P. H.; enclosed variable speed governor; economy "valve in head" high compression engine. And to take the word of a leading tractor authority: "Lubricating, cooling and sealing provisions of the 'R' conform to the highest automotive standards."

With far fewer engine parts, with trim built-in Visionlined features, with best of materials used, with MM's No. 1 quality construction throughout, with versatility for belt, drawbar, power takeoff and row crop work, you must agree that the "R" is in a class by itself—truly the World's Most Modern Tractor. The "R" is also made with single front wheel.

NOTE: "Quick-On—Quick-Off" machines, power lift, power takeoff, electric lighting and starting equipment, and belt pulley assembly are available for the "R" as extras at low cost. Get complete facts today and buy only after you have seen the "R"—then you'll want no other make. A standard tread "R" is also made. See page 9.





"Z" TRACTOR

NEW UNIVERSAL Z

...itt Champion
rtt the 2-3 Plow Class

JUDGED BY FARAI RSTI-1
WO2LD Gil/E/

**ECONOMY • POWER
DURABILITY • ENDURANCE
QUALITY • SPEED
VISIONLINED**



0044. aneka-,



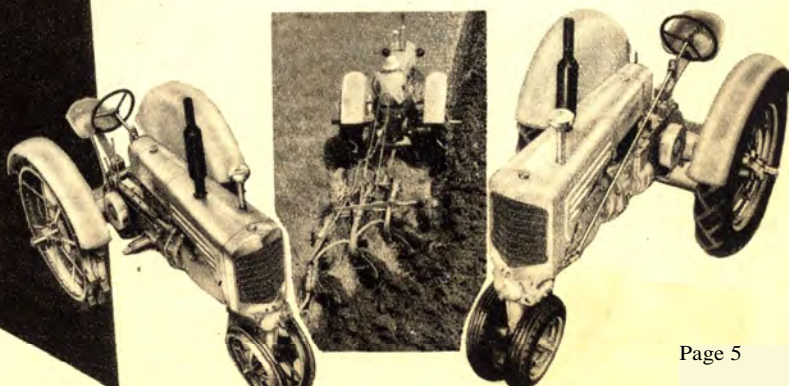
Now on its third successful year, the Universal "Z" has been a proven high class performer ever since its introduction. The "Z" has proved its versatility for belt, power take-off, power lift, and general draw-bar work in addition to row crop work. Its exceptional performance on all jobs it has been called upon to do has made it the most popular tractor on the market.

With its trim *Visionlined* features, its unique heavy-duty engine with over 140 fewer parts, and its features of easiest inspection and servicing, the "Z" has made and is making tractor history.

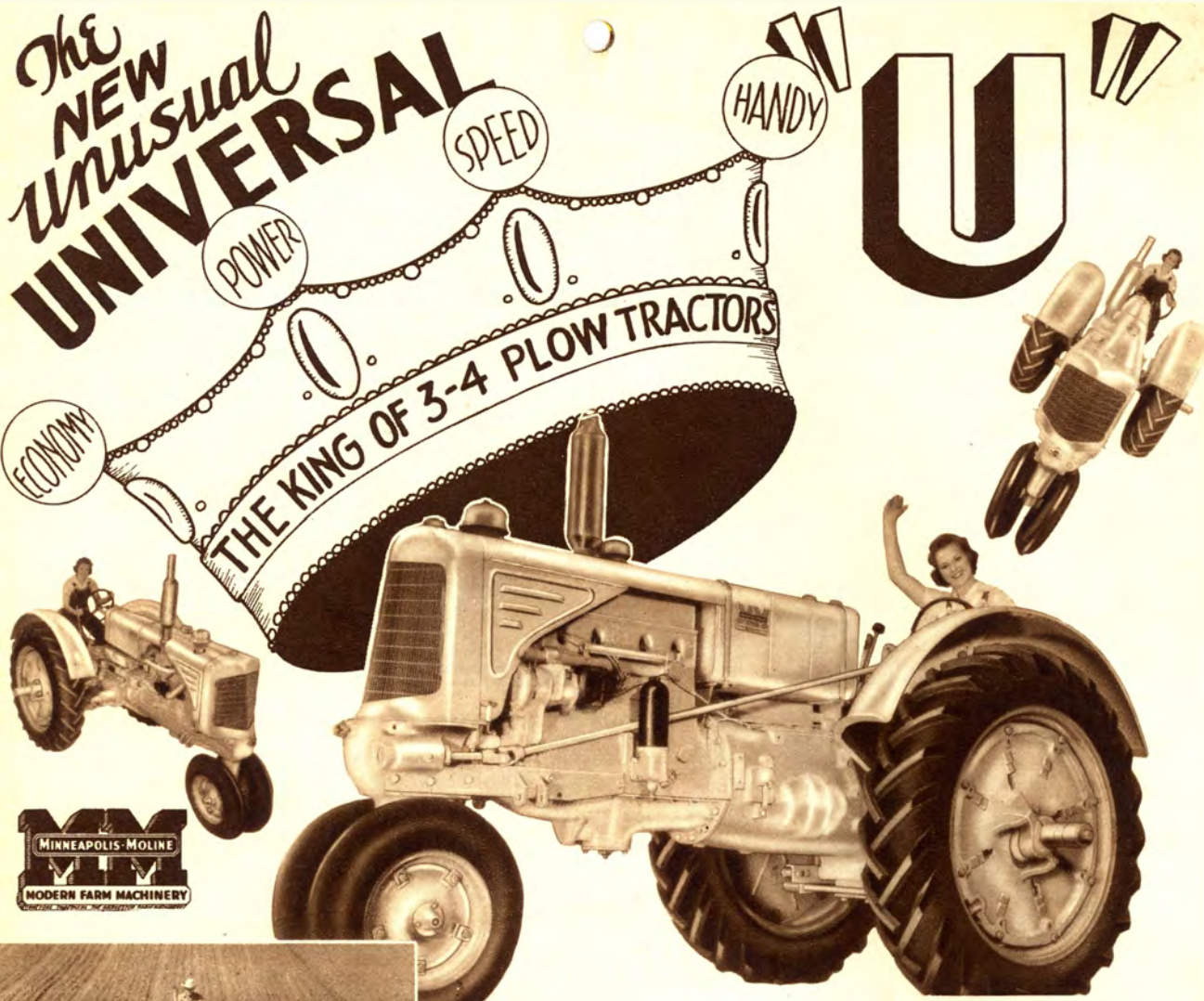
The Universal "Z" is now regularly equipped with high compression engine head. It has 5 forward speeds from 2 to 15 M. P. H. Rear wheels are adjustable for row crop work from 54 to 84 inches, and fenders are adjustable with wheels. Big Bendix Brakes assure quick, easy stops and a turning radius of 8 feet.

The Universal "Z" is built to insure greatest comfort and safety for the operator. The "Z" seat is of a new, deep, comfortable, safe design, situated to insure utmost safety to the operator. Sturdy crown fenders give added protection, as well as improving appearance of the tractor. Trim, built-in visionlined construction gives best operating vision.

For best general utility, for outstanding performance on every farm job, for lowest upkeep cost, for easy, safe, economical operation, you will want the "Z". NOTE: A full line of "Quick-on—Quick-off" implement attachments are available and adapted for use with the "Z". It's a complete farming outfit at lowest cost. Get facts now on the "Z" and its many uses. The "Z" is the last word in modern 2-3 Plow Tractors. The ZTN Model with single front wheel is ideal for narrow spaced rows. A Standard Tread "Z" is also made.



The NEW Unusual UNIVERSAL



V

By far the outstanding tractor announcement of recent months was the introduction of the Universal 'U'. This super-modern, *visionlined* brute of the fields and highways is truly a tribute to modern science and a monument to Minneapolis-Moline"—writes an engineer who knows the farmers' problems and considers himself the severest critic of tractor manufacturers. It is logical that an MM tractor should be thus honored and crowned KING OF THE 3-4 PLOW TRACTORS, for behind this machine is the Company that pioneered the modern tractor.

Features which have predominated the MM tractor line for years and have proven so popular with farmers everywhere are all included. Notice the VISION-LINED shape for perfect vision to EVERY implement with safety—notice the SPEEDS, from a crawl to 18 M. P. H. for 3-4 bottom plowing or highway transportation—notice the deep seat, crown fenders, and long life muffler for your COMFORT.

The UNIVERSAL "U" is more than just another tractor. Behind it you will find every important feature which good farming demands. Check them yourself.

ENGINE—Powerful, 4 cylinder, heavy-duty power plant with a variable speed governor, high compression, force feed oiling system, oil and air-cleaners—sealed completely.

TRANSMISSION—five forward speeds—all gears and shafts are heat-treated alloy steel mounted on large anti-friction bearings giving long life, quiet operation and extra strength for tough pulls.

BRAKES—2 large, automotive type brakes which can be operated independently or simultaneously.

WHEELS—flat rim, open, or pneumatic—fully adjustable for every condition.

SAFETY—deep, bucket seat with sturdy rubber mounting—crown fenders protect operator from wheels—strong, properly located drawbar, protected power take-off.

ECONOMY—operating costs show the utmost in economy by test and experience.

DEPENDABILITY—always unquestioned—see Page 22.

UTILITY—outstanding performance on belt, power take-off, and drawbar work. Ideal for hauling to market with speed and safety. Especially adapted for row crop work, with a complete line of "Quick-On—Quick-Off" tilling, planting and cultivating attachments available for the "U".

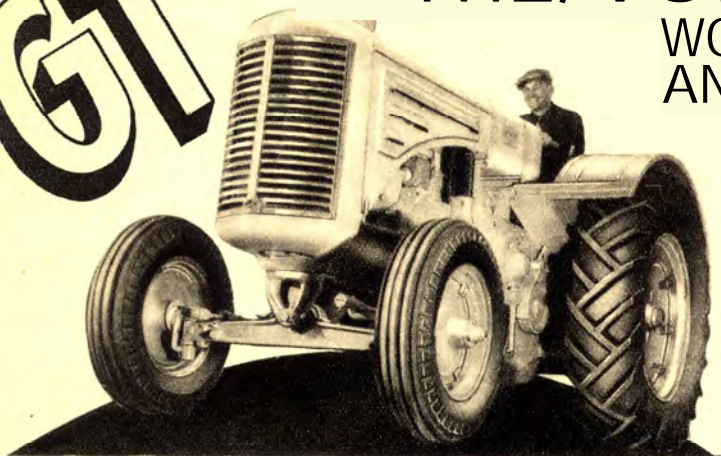
If it's a 3-4 plow powered all purpose tractor you need you'll be years ahead and money ahead every year if you get the Unusual Universal "U".
Get facts now from your MM dealer!

GT

THE/VODIA'K 0/4117

WORLD'S NEW POWER AND FUEL ECONOMY

CNAMP/OM



"GT" TRACTOR

When Minneapolis-Moline proudly introduced the ultra-modern "GT" tractor, we predicted it would set new power and economy records. This prediction was upheld in the official Nebraska test in which the "GT" smashed all previous power and fuel economy records with a brilliant demonstration of power unrivalled by any tractor near its size and with a new all-time record for low fuel consumption.

Below is a copy of the Official Nebraska test. Note the maximum belt horsepower of 55.08 and the maximum drawbar horsepower of 44.99, and the 36-48 rating of the "GT," and compare these with the maximum belt and drawbar horsepower, and the Nebraska H. P. rating of any tractor of similar size. Compare the fuel economy of 0.519 pounds of gasoline per horsepower hour with the fuel economy of any tractor of any size or type.

It will pay you to investigate further and get complete facts from your local MM dealer. The findings of the official tests show the wonderful gains in power and economy which can be made by using tractor engines adapted to take advantage of regular 70 octane gasolines now being sold at regular price by leading oil companies in the United States and Canada. Remember too that Lower Lubrication and Upkeep Costs also result from using regular gasoline. As you investigate the facts, we're sure you'll agree that the "GT" will give you maximum power at lowest fuel, lubricating, and upkeep costs.

UNIVERSITY OF NEBRASKA--AGRICULTURAL ENGINEERING DEPARTMENT--
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 317

Dates of test: May 1 to 12, 1939. Name and model of tractor: M-M
TWIN CITY CT (Gasoline).

Manufacturer: Minneapolis-Moline Power Implement Company, Minneapolis, Minn.

Manufacturer's rating: NOT RATED

BRAKE HORSE POWER TESTS										No. 317		
H. P.		CRANK SHAFT SPEED R. P. M.	FUEL CON. GALLS PER HOUR		H. P. HRS. PER GAL.		L. PER I P OUR		WATER USED GAL. PER HOUR	TEMP. DEG. F. COOLING MED. AIR	= TO: MERCURY	
TEST B 100% MAXIMUM LOAD TEST. TWO HOURS												
							0.526	1.000	176	74	29.020	
TEST C OPERATING MAXIMUM LOAD. ONE HOUR												
							0.519	1.000	177	75	9.000	
TEST D ONE HOUR												
49.02	1074	4.300	11.40			0.00	01173-75=20					
-TEST E VARYING LOAD. TWO HOURS 1.0 MINUTE RUNS.												
DAU EMATED LOAD												
DRAWBAR HORSE POWER TESTS												
FUEL CONSUMPTION										WATER USED GAL. PER HOUR	TEMP. DEG. F. COOLING MED. AIR	TEMP. DEG. F. COOLING MED. AIR
SPEED		GALS. PER HOUR	LOS. PER HOUR	X. P. SOUR	H. P. HRS. PER GAL.		L. PER I P OUR		WATER USED GAL. PER HOUR	TEMP. DEG. F. COOLING MED. AIR	TEMP. DEG. F. COOLING MED. AIR	
TEST F 100% MAX MUM LOADS. <u>Second</u> -GEAR-												
44.99	4964	3.40	13.89	194	89	28.600	194 89 28.600					
TEST G OPERATING MAXIMUM LOAD												
31.60	56	15.00										
44.31	48	Mfg										
47.85	51	auman										
46.24	179	1771151	MIIM	MUM								
TES H TEN HOURS. <u>anomat</u> -GE-												
36.96	3849	3.60	1074	6.64	3.918	9.43	0.639	0.000	163	64	29.020	

The Giant of the MM tractor line is the outstanding 4-5 plow tractor on the market. It is modern in every detail, with Visionlined design over all. The "GT" engine is of the proven upright four cylinder design, with force feed lubrication throughout, and with high compression cylinder head as regular equipment. The "GT" four speed quiet running transmission, with four forward speeds from 2 to 9 M. P. H., is fully enclosed and completely sealed against dust and dirt. Simple, precision cut gears are fully enclosed and equipped with highest grade oversize roller bearings to assure smooth running.

Full size deep bucket type seat mounted in live rubber block, solid, roomy platform, sturdy full fenders, automotive type exhaust muffler, and full easy Vision for every job assure Comfort and Safety for the operator.

Get facts now on this modern Giant, in a class by itself when it comes to delivering steady, dependable, maximum power at minimum upkeep and operating cost.



FUEL, OIL, AND TIME. Fuel: Gasoline (Octane 70). Weight per gallon-6.03 pounds. Oil: S. A. E. No. 30-To motor, 3.004 gal., Drained from motor, 2.226 gal. Total time motor was operated, 52 hours.

BRIEF SPECIFICATIONS: Advertised speeds, miles per hour: First-2.7, Second-3.8, Third-5.8, Fourth-9.6, Reverse-2.8. Belt pulley: Diameter-16", Face-7 1/2". R.P.M.-650. Belt speed-2,720 f.p.m. Clutch: Make-Twin Disc, Type-Single plate, dry, operated by hand. Seat-pressed steel. Total weight as tested (with operator) 9,445 pounds.

MOTOR: Make-Own; Serial No. GE903416: Type-4 cylinder, vertical; Head-I; Mounting-Crankshaft lengthwise; Lubrication-Pressure; Bore and stroke-4 3/8" x 6". Rated R.P.M.-1,075. Port Diameter Valves: Inlet-1 1/4", Exhaust-1 1/2". Magneto: Make-Fairbanks-Morse, Model-FM-4. Carburetor: Make-Schebler, Model-TTX23. Size-1 1/4". Governor: Make-Own, Type-Centrifugal. Air Cleaner: Make-Donaldson, Type-Ejector pre-cleaner and oil washed wire-screen filter. Oil Filter: Make-H-W, Type-Renewable waste element. Cooling medium temperature control: Dole thermostat.

CHASSIS: Type-Standard, Serial No. GT160329, Drive-Enclosed gear. Tread width: Rear-56 1/2", Front-51". Rear Tires: No.-2, Size-13.50"x32"-6-ply Air Pressure-16 lbs. Front tires: No.-2, Size-7.50"x18"-4-ply, Air Pressure-28 lbs. Added weight: Per rear wheel. Cast Iron-850 lbs., Water-420 lbs.; Per front wheel. Cast Iron-80 lbs., Water-none.

REPAIRS AND ADJUSTMENTS. No repairs or adjustments.

REMARKS: I. All results shown on page 1 of this report were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with carburetor set for 100% maximum belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G and I were made with an operating setting of the carburetor (selected by the manufacturer) of 98.0% of maximum belt horsepower.

- Observed maximum horsepower (tests F & B) 44.99.....55.08
 - Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.) 48.36.....57.56
 - Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly A.S.A.E. and S.A.E. ratings) 36.27.....48.93
- We, the undersigned, certify that the above is a true and correct report of official tractor test No. 317.
- E. B. BRACKETT
CARLTON L. ZINK
Engineer-in-charge
- C. W. SMITH
L. W. HURLBUT, Board of Tractor Test Engineers



INDUSTRIAL ENGINES

24-200 H.P.
10 Sizes



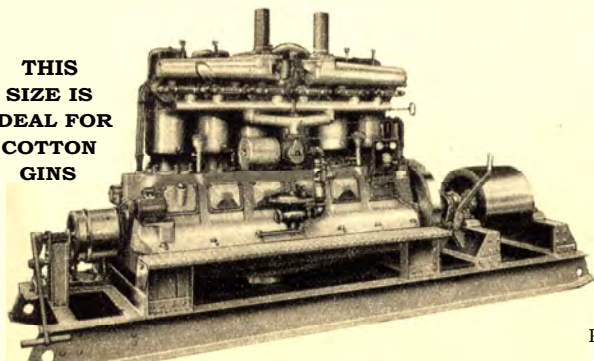
Get
Facts

N
O
W

FOR MEN WHO EXPECT AND GET ECONOMICAL OPERATION AND LONG TROUBLE-FREE LIFE, MM POWER UNITS ARE THE TOP CHOICE

MM unit engines have met the exacting needs of every industry where the use of dependable, independent power is needed. Slow speed, extra strength, precision workmanship, and advanced design give **ECONOMICAL OPERATION AND LONG LIFE**. Thousands of these engines are delivering reliable independent power in industry and on the farm--in cotton gin mills, water and oil pumping, well drilling, power shovels, hammer mills, flour mills, saw mills, elevators, etc. Simple, heavy-duty construction assures full power after years of operation. **MM MAKES MORE SIZES OF HEAVY-DUTY TRACTOR ENGINE TYPE POWER UNITS THAN ANY OTHER MANUFACTURER** in this industry ten sizes in all from 24 to over 200 horse power, burning gasoline, kerosene, distillate, natural gas and butane. A few of the features which have won universal acceptance for MM independent power units are the enclosed ball bearings, governor, force feed lubrication, complete protection from dust and dirt, and rugged construction. Ask for the free MM engine book, or send for complete description and specifications.

**THIS
SIZE IS
IDEAL FOR
COTTON
GINS**

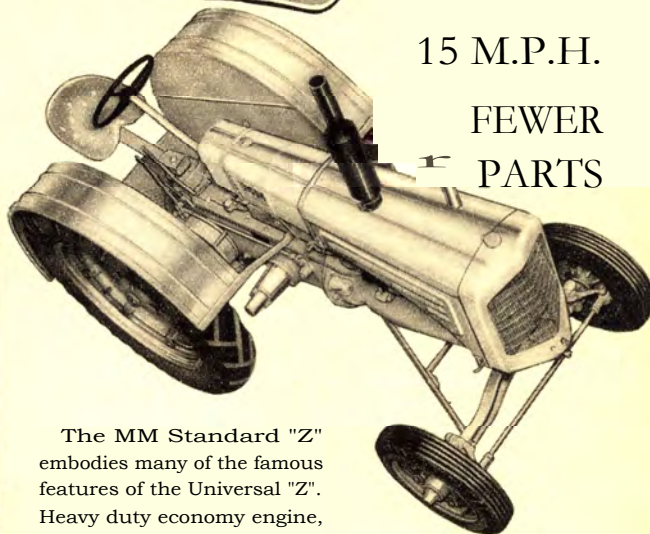


for "Z" STANDARD

5 SPEEDS
FORWARD

15 M.P.H.

FEWER
PARTS



The MM Standard "Z" embodies many of the famous features of the Universal "Z". Heavy duty economy engine, with high compression cylinder head; quiet running, long life patented transmission, with five forward speeds from 2.3 to 15.3 M. P. H.; force feed lubrication; fully enclosed, variable speed governor; 2 large size Bendix brakes; and Twin Disc hand operated clutch are just a few of the Standard "Z's" outstanding features.

The Standard "Z" is the most modern 2-3 plow standard tread tractor. Visionlined features provide clear vision for all jobs. Seat is of a new deep, comfortable design, so situated as to insure greatest safety to operator. Full sturdy steel fenders protect operator from tractor wheels, and from dust and dirt. On drawbar, belt pulley, power take-off, and power lift the Standard "Z" provides a wide range of utility at lowest fuel and upkeep cost. It will make you proud as an owner by its trim, sturdy appearance and its top notch performance.

AND NOW HERE IS THE STANDARD "R" WITH OR WITHOUT COMFORT CAB

Ever since the Universal "R" has been making tractor history, many farmers have awaited the day when its history-making features would be embodied in a standard tread tractor.

That day has come--the STANDARD "R" is here. The first in its class with or without all-season COMFORT CAB, powered with the "R's" famous EE engine, with rear wheels ADJUSTABLE from 52 to 84 inches, and front from 47 to 54 inches, and guided by the famous Ross steering mechanism, the Standard "R" is indeed a "HEADLINER." Extra utility, greater comfort and ease of handling, together with the assured better Dependability and Economy of MM tractors, make the new "R" the Stand-Out in its class. See your MM Dealer.



0/11/4111m

MINNEAPOLIS-MOLINE

ROTARY HORSE DRAWN DISC PLOWS



RD DISC PLOW



MR DISC PLOW



TK TWO WAY PLOW



TR DISC PLOW



EF ADJUSTABLE PLOW



HM HIGH LIFT HORSE PLOW



PLOWS FOR EVERY NEED

The answer to your plowing problems is found in this assortment of all types of plows manufactured by Minneapolis-Moline—the builders of better plows for better plowing for better farmers.

RD Horse Disc Plow—If your conditions call for horse drawn rotary disc plowing, investigate the many features of this plow. Note the guiding device, the scrapers, the clearance, the casting rear wheel, the sturdy construction. It is the best horse drawn disc plow built.

MR Tractor Disc Plow—This rotary plow embodies all features necessary for better disc plowing. The two large 24" discs cut 20" with a uniform furrow depth. Fully adjustable for depth. Scrapers and wheel weights are furnished.

TK Two Way Plow—Nick-named the "Tumble Bug" by its thousands of satisfied users, this two-way plow has found great favor for hillside plowing, terracing, and turning irrigated fields. It is available with one or two bottoms, with a wide selection of share styles and sizes. By far the leading seller. See page 33.

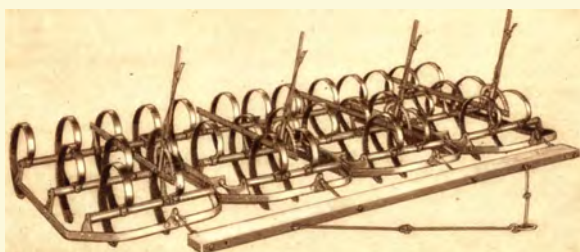
TR Tractor Disc Plow—This new MM TR disc plow will cut your cost of seed bed preparation and does an excellent job of plowing, mixing stubble thoroughly with the ground and preventing air pockets and soil blowing. Where soil is hard and regular moldboard plow cannot penetrate, the TR will do an excellent job. High clearance type. Adjustable for plowing from 3 to 14 inches deep. Available in four sizes from 2-3 disc to 4-5-6 disc sizes.

EF Plow—The MM model EF is a durable light-weight 2 bottom plow. It has been a favorite in all parts of the country, and a winner of many famous plowing contests. The EF embodies in its construction most of the special patented plow features developed by MM. Special features in wheels and beams make it readily adjustable for width of cut. Can be used with 1 or 2 bottoms to plow a strip 10 to 36 inches wide.

Hi-Lift Horse Plow—MM high lift plows embody many outstanding plow features, most of them patent protected. The MM high lift sulky and gang plows are famous for their excellent plowing, good scouring and longer life. Special MM features in foot lift make lifting easy and safe for boys, with whom this plow is the most popular of its kind ever made. See also pages 14, 15, 25, 28, and 32.

THE FAMOUS MM SPRING TOOTH HARROWS

Moline spring tooth harrows have real spring steel teeth and are built to last longer without wear or breakage. Sizes: from 2½ foot to 19-foot. Available with: regular point, reversible point, quack grass or alfalfa point teeth. Levers can be changed to front for tractor use. Sections are hinged together with just one runner between them—this prevents clogging, helps penetration and makes for easy pulling. Riding attachment available for 15 and 17-tooth harrows. The ideal harrow for difficult conditions in all kinds of soil. Get facts from your MM Dealer on its better performance.



SINGLE DISC
FLUTED FEED

FERTILIZER

DOUBLE RUN

DEEP FURROW

DOUBLE DISC

PLOW&SEEDER

LISTER

PRESS

ALL STEEL MOLINE MONITOR DRILLS

LIGHTER DRAFT LONG LIFE ACCURATE FEEDING



SINCE 1871 "MOLINE-MONITOR" has been a household term for the Highest Quality Grain Drills. Moline-Monitor was the first successful grain drill. Many of the world's finest drill features were pioneered and patented on the Moline-Monitor. Since 1871—Moline-Monitor, the PIONEER, has been year after year the Drill of PROGRESS.

You can now get all the famous Moline-Monitor drill features plus all-steel construction, roller bearings, and many new improvements, including easier handling. Moline-Monitor drills are known for their dependable accuracy, better balance, uniform depth of drilling, lighter draft and longer life.

Good yields depend largely on accurate and proper seeding. Moline-Monitor famous fluted feeds and double run feeds assure a positive, even feed. Seed is accurately and evenly distributed. Damage to seed is positively eliminated. If you buy a "Monitor" you don't have to buy a special drill for flax and other delicate and expensive seeds. The "Monitor" will handle all seeds with utmost care and distribute them with absolute accuracy.

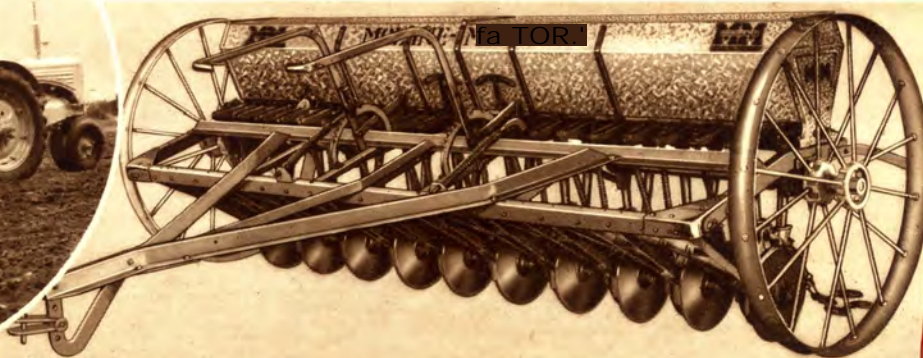
Moline-Monitor Double Disc openers and single disc openers assure a uniform depth of drilling. With this uniformity, and even distribution of seed, grain ripens evenly, grades better and yield is increased. Moline-Monitor disc openers cut through trash better and do a better job of covering the seed uniformly. Moline-Monitor double and single disc openers are of most durable materials and best construction throughout and are noted for their long life.

Minneapolis-Moline Drill engineers have developed the most successful grain drills for use in areas in which the Deep Furrow or Lister Method should be used. Deep Furrow drills make furrows with protecting ridges which prevent frost killing, seed blowing and soil drifting, and conserve moisture. Aside from the furrow openers and the spacing of feeds, Deep Furrow Drills are the same as the regular Moline-Monitor drills. It will pay you to investigate the Moline-Monitor Deep Furrow Drills, recognized as the most successful deep furrow drills.

The Moline-Monitor Grain Drill line also includes Press Wheel Drills, Fertilizer Drills, and Seeders or Broadcast Sowers. Press Wheels, Fertilizer and grass seeder attachments are also available as extras for regular Moline-Monitor Drills.

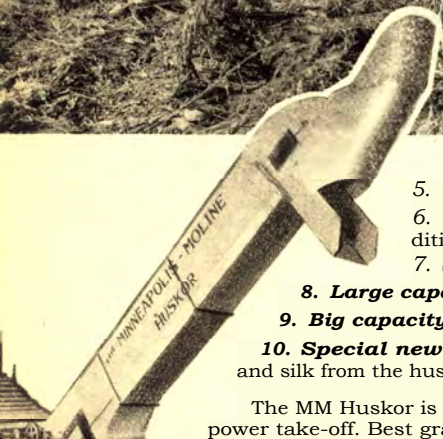
Moline-Monitor Drill hopper, frame, hitches, levers, pressure springs, axles, wheels and bearings embody many exclusive and outstanding features not found on other grain drills. If you are interested in a grain drill, it will pay you to buy the Best—for greatest accuracy, better balance, best uniformity, lighter draft, and longer life. The Moline-Monitor will pay for itself in seed saved and in increased yields. Get the Highest Quality Drill—it costs no more!

For full information on Moline-Monitor Grain Drills, see your local MM Dealer, or write Minneapolis-Moline, Minneapolis, Minnesota, or your nearest Division Office.



The Huskor

MORE HUSKING
ROLLS
LONGER PICKING
ROLLS



Ten Big Reasons WHY you are ahead to buy the MM HUSKOR:

1. **Adjustable floating** snouts pick up down stalks and out of line stalks and guide them all to the gathering chains. Just what you need for your crop this year and varying conditions year to year.

2. **Six gathering chains** instead of the usual four grasp all the stalks and guide them uprightly into the snapping rolls. Ideal for saving all the ears in extra tall and down corn as well as average stands.

3. **53 1/2 inch snapping rolls** are 2 1/2 to 12 inches longer than usual, designed to prevent shelling in the field, and assuring a better job on low and high hanging ears and on down and twisted corn. Ideal for extra tall corn as well as average stands.

4. **Big capacity** snapped corn elevator.

5. **Wider husking bed** to handle big yields better and with greater speed.

6. **12 full length 36 inch long husking rolls** for better, cleaner husking under all conditions and particularly for heavy stands and big yields.

7. **Simplified drive** for husking rolls.

8. **Large capacity** husked corn elevator puts all the corn in the wagon.

9. **Big capacity Corn Saver** is on the job all the time to save any loose kernels.

10. **Special new Cleaning Fan Attachment** on elevator positively eliminates dirt, dust, leaves and silk from the husked corn and insures clean corn delivered into the wagon box.

The MM Huskor is of all-steel construction. It is operated by the average 2-plow tractor equipped with power take-off. Best grades of roller, ball and bronze bearings are used throughout. There are fewer but better chains and gears. Most gears run in an enclosed bath of oil. All lubrication fittings are of latest hydraulic type.

The MM Huskor is specially designed throughout to meet tough husking conditions in connection with the production of hybrid corn. Every one of the ten features enumerated above was installed to successfully meet modern husking conditions.

The MM Huskor has been tried and proved to do the fastest, cleanest, most economical job of husking corn under all conditions. It will make money for you on the extra corn it saves, and provide you with lowest cost corn husking this year and for many years to come. Get complete facts now from your local MM dealer.



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Minneapolis-Moline Cylinder Corn Shelters have long enjoyed the reputation of being the Most Popular. Custom shelters and farmers alike cannot be too hearty in their praises of MM shelters.

Newest addition to the MM Sheller family is the new Model D. MM Shelters are now made in three popular sizes, all top-notchers for safer, cleaner, and faster shelling.

Model B—Capacity 300 to 900 bushels of snapped corn, and 800 to 1400 bushels of husked corn per hour. 53 1/2 inch long cylinder and cage. Powered by 3-4 Plow Tractor.

Model A—Capacity 200 to 600 bushels of snapped corn, and 500 to 800 bushels of husked corn per hour. 40 inch long cylinder and cage. Powered by 2-3 plow tractor.

Model D—Capacity of 75 to 200 bushels of snapped corn and 175 to 275 bushels of husked corn per hour. 32 inch long cylinder and cage. Powered by two plow tractor. This shelter will enable many corn belt farmers to own their own unit, and its big capacity will enable owners to do considerable custom work for neighbors. The Model D is mounted on two rubber tired wheels—extra handy for transport.

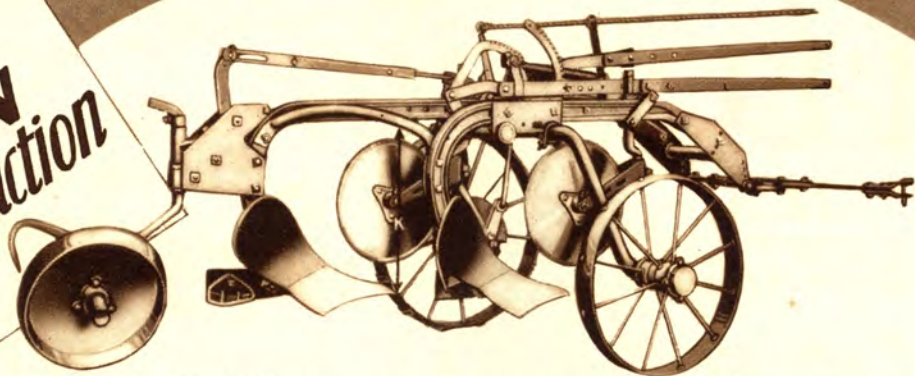
Either the Model B or Model A MM Shelters may be mounted on your truck, making a handy set-up for custom shelling. MM Shelters have many special safety features making them extra safe to operate. MM Shelters are light-running, and do the best job of clean, fast shelling. Highest grade roller bearings and chain are used. Gears are enclosed and run in a bath of oil. Have an MM Sheller do your next shelling job, and you'll never want any other to do it. Get facts from your local MM Dealer.



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SEE YOUR PA-14 DEALER

Hi-KLEARANCE PLOWS

Masterpieces in
PLOW
Construction



HERE ARE
MM FEATURES
ALL FARMERS
APPRECIATE



MM Hi-Klearance tractor plows set a new standard in plow construction. The product of skillful plow engineers, MM Hi-Klearance plows were tested, perfected and proved in the field for four complete plowing seasons before their introduction until now they meet every modern plowing need.

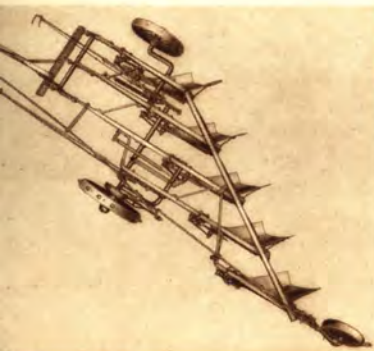
New Features of the MM Hi-Klearance plows are their extra high lift and their remarkable clearance designed to successfully prevent clogging and to eliminate dragging of trash. These new features are combined in the MM Hi-Klearance plows with MM's 75 year record of offering the best scouring plows with highest draft and longer life---always doing the best possible job under all conditions.

The greater clearance of $23\frac{1}{2}$ " between the point of share and under side of the beam, and $26\frac{1}{2}$ " distance between share points, with a throat clearance of $23\frac{1}{2}$ " assures easier handling and better performing plows. MM Hi-Klearance tractor plows have a maximum transporting lift of 10", with a power lift of 7" without a change in levers and accomplished on $\frac{1}{2}$ revolution of the 30" in diameter land wheel. The MM heavy duty power lift requires no lubrication and is completely sealed against dust and dirt.

MM Hi-Klearance plows come in 2-3-4 and 5 bottom sizes. In each size bracing is designed to give greatest possible strength and long life rigidity. Heavy durable MM braces are upset at point of attachment to beams for maximum strength, are forged to fit into the web of the beams, and extend well around the curve of the beams to reinforce them at the point of greatest strain.

The MM Hi-Klearance plow hitch is strongly braced with a 2" steel torque tube to withstand severe shocks, and is adjustable for drawbar height, varying ground conditions and depth of plowing.

The MM Hi-Klearance plows conform generally in construction and quality to MM plows—plows which have set the standard in construction and quality since 1865 for best scouring, lightest draft and longest life. Get complete facts. Don't buy any plow until you've seen the new MM—and we sincerely believe then you'll buy no other!



WHEATLAND

PLOWS

and
SEEDERS

Cut costs
50%



The MM is the Original successful Wheatland disc Plow with 26 inch diameter discs and 10 inch spacing between discs.

The records prove that it greatly reduces cost of seed bed preparation because of its wide cut and light draft. OWNERS say with pride that the

MOLINE is by far the BEST. It does an excellent job of plowing, mixing stubble thoroughly with the ground, preventing air pockets and soil blowing. It can be set to meet almost any requirement and will do a real job of plowing from 3 to 9 inches deep. Because of the large discs, wide spacing and other special features, this plow has established a reputation as the Wheatland Plow that does a real job of plowing with minimum draft. The discs are built to scour under difficult conditions. Ideal for stubble land, sod and any type of soil.

MM Wheatland plows may be set to work at a 40, 45, 50, 55, or 60 degree working angle, automatically placing rear wheel in the correct position in furrow and aligning land wheel with rear wheel (AN EXCLUSIVE MM feature). 4 ft., 6 ft., 8 ft., and 10 ft. sizes—hand or power-lift type.

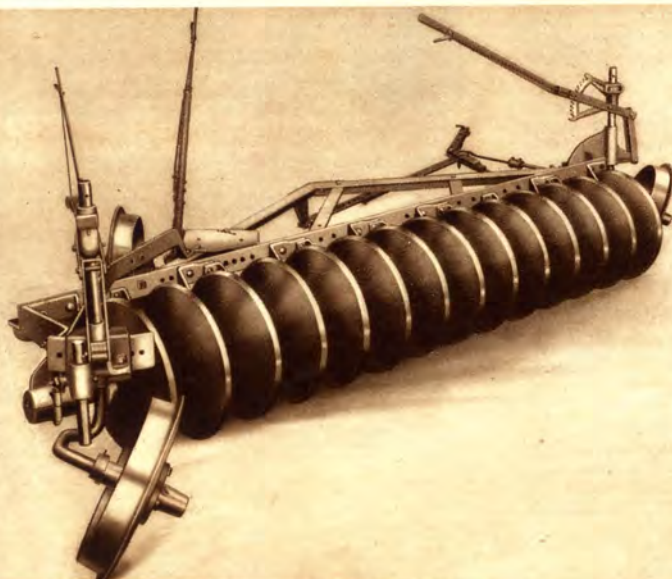
The Wheatland Disc Plow, equipped with the MONITOR seeding attachment, becomes a machine that will do the spring plowing, harrowing and seeding in one trip over the field. It prepares a good seed bed, does an excellent job of DRILLING OR BROADCASTING, and all in shorter time and at less expense. It has the simple, clean-cut design and accurate fluted feed that have made MONITOR DRILLS famous for their good work.

C)p

D's

MOST POPULAR

6N4



THRESHERS



2-4 ROW CHECK PLANTERS FOR UNIVERSAL TRACTORS

The MM 2 and 4 row check planter with its exclusive "payout" stake has the same planting mechanism as the horsedrawn Moline World's Champion planter. This 2 and 4 row check planter plants in straight even rows, giving an accurate cross-check. It has all the advantages of both pull behind and rigid type planters. The "Centered" hitch point, and long rudder assure that ordinary movements of the tractor do not affect straight row planting. At ends the planter is raised by power-lift, and turns as part of the tractor.

The MM payout stake has eliminated the bad checking, and the bad



The MINNEAPOLIS SPECIAL 28x46 Thresher is at work shown above. This all-steel, large capacity, long life thresher will handle all grains including rice and seeds. Nineteen roller and ball bearings--only 6 belts. The concaves and steel cylinder have the famous Minneapolis Keystone teeth. An entirely different grate is behind the cylinder to meet all threshing conditions year after year. The racks are All-Steel, four-section, full rotary, pitching, tossing type. These racks assure better separation and also keep most of the chaff off the shoe. Continuous even feeding saves you time and money. The MINNEAPOLIS SPECIAL has plenty of clearance between racks and chaffer. It is built for big capacity threshing in every way for every type of grain and seed. Much larger sieve area assures a much faster, better cleaning job. Experienced threshermen marvel at its light running and clean, fast work. Get complete facts now.

Champion PLANTERS

effects of wire drag, so that you get a good cross check at row ends as well as in the center of the field. It is a very simple device. Easy to operate. Gives a straight wire planting job the full length of the field.

A field planted with a MM checkrow planter and payout stake is very easy to cross-cultivate with your tractor. Its accuracy and straight rows mean much for speedy cultivation and also faster and better mechanical corn picking and husking.

A 2-ROW HORSEDRAWN PLANTER

Accuracy is a mighty important feature of any planter. Even the slightest inaccuracy—a few kernels missed here and there--means a big loss to you when your crop is ready for harvest. The Moline "World's Champion" corn planters have planted 5 successive World's Record yields and officially planted 1,083 hills without missing a single kernel. You need this accuracy for good yields and you should insist on a genuine MM Moline when you buy. There are seed plates to accurately plant all types of seed. MM Planters are ideal for planting Hybrid seed corn--a plate for every type. Both edge drop and round hole plates are furnished. Get facts now. OWNERS tell us that if every farmer knew the performance of MOLINE Planters they'd all insist on getting an MM.



HAMMERMILL



The MM Hammermill is the safest large capacity Hammermill for your farm. It is of SIMPLE design and made of boiler plate steel with WELDED leakproof construction.

Every year more and more farmers find that tilt), can build larger profits by grinding their own grain and roughage for livestock feed. The MM Hammermill has large capacity, yet may be operated by any 2-plow tractor, or power up to 70 horsepower.

The drive pulley, rotor, and fan are on one heavy duty shaft running on two double rows of self-aligning ball bearings. A money-maker for farmers and CUSTOM grinders alike. A complete mounted job with power unit for use on a truck is also available. Ask for complete facts. See page 34.

Anniversary **1865-1940** **HAY TOOLS**



The MM line of Hay Tools is this year celebrating its Seventy-fifth Anniversary. The first Moline Hay Rake, built in 1865, was the forerunner of the famous MM line. In this Diamond Jubilee year, Minneapolis-Moline offers a complete line of Modern first quality Hay Tools, including the MM tractor power Uni-Mower, MM improved Horse Drawn mower, MM Combination Side Delivery rake and tedder, MM sturdy improved Sulky Rake, and the new MM combination cylinder and rake bar loader.

MM UNI-MOWER

The MM Uni-Mower fits any modern wheel type tractor equipped with power take-off. Sturdily built for speed and endurance, quiet and smooth running, the MM Uni-Mower backs and turns as if it were a part of the tractor. The MM UniMower roller chain drive operates in a bath of oil inside of an oil tight housing. Automatic slip clutch and a safety release hitch protect the mower from damage upon meeting solid obstructions. Equipped with a 7 foot cut, the MM Uni-Mower will cut from 20 to 35 acres a day. Also available in 4 1/2, 5, and 6 ft. sizes.

MM HORSE DRAWN MOWER

The improved MM Horse Drawn mower, with its Automotive-Type Transmission, sets a new quality standard in horse drawn mowers. The clutch and all gears are enclosed in an oil-tight housing. All revolving shafts are mounted on heavy duty, light running Timken and Hyatt roller bearings. MM Horse Drawn mowers give assurance of lightest draft and longest life, and are nicely balanced to eliminate neck weight and to save the horses' necks and shoulders.

MM SIDE DELIVERY RAKE AND TEDDER

The Combination MM Side Delivery Rake and Tedder handles hay quickly and easily. It leaves hay untangled, with the stems turned outward for drying and the leaves turned inward to prevent overcuring and too rapid drying. The MM Rake has a sturdy high carbon steel angle frame, with high main arch assuring plenty of clearance for heavy raking jobs. Other features of the MM Rake are its simple cylinder drive and a shock absorbing spring, protecting drive gears and rake teeth against breakage. All adjusting levers and throwout clutch are within easy reach of the operator.

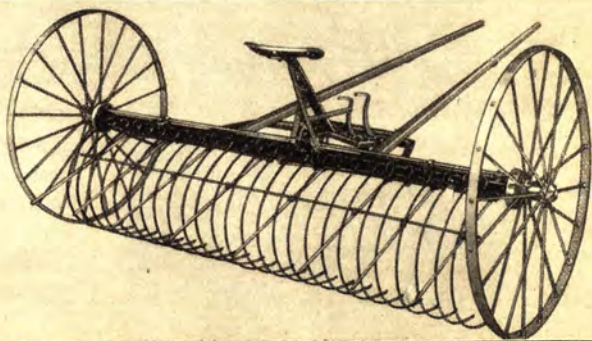
MM COMBINATION CYLINDER AND RAKE BAR LOADER

The new MM Combination Cylinder and Rake Bar Loader combines the best features of both the cylinder and raker bar loaders. Its cylinder pickup gets all the hay and leaves a clean field, as the raker bars smoothly elevate the hay onto the load without excessive churning and damage of leaves. The MM hay loader is built for long life, is easy pulling, and has flexibility for traveling on and cleaning uneven fields. It's easy to handle. Farmers call it the finest loader built. It saves the valuable leaves for feed.

MM SULKY RAKE

The Famous MM Sulky Rake is the most modern and improved sulky rake on the market. It has come a long way since the original Moline Hay Rake made in 1865. The MM Rake comes with thills, spaced for use with one horse. These are easily adjusted for two-horse hitch by moving the thills to the center to form a sturdy tongue. The frame of the Moline Sulky Rake consists of three heavy steel angles assembled for greatest possible rigidity and long life service. Oil tempered, coiled teeth follow the ground surface without digging in and are curved to carry the hay instead of pushing it along the ground, thus preventing damage to the leaves. Handy, smooth working foot and hand levers make the MM Sulky Rake a pleasure to operate. This durable heavy duty rake is available in 8-9-10 and 12 ft. sizes.

Get facts now on this and other MM Hay tools. Make your own comparisons, and we're sure you'll be making hay the MM Way.



The Harvestors

The sell-out record year after year is proof of superior quality, economy and dependability. For 4 years the 12 ft. Harvester has been the leading seller in its size.

The MM Harvester is the first practical light weight high capacity combine. Many patented features make it the best for all crops. With an MM Harvester you are always assured of fast clean harvesting at lowest cost whether the grain is short and light, extra heavy or down and tangled. You may do a straight combining job and be assured of a superior job of getting, threshing, separating and cleaning all the crop. Or you may cut the grain with the MM Windrower and then use the MM Harvester equipped with pickup attachment. Either way, you'll get top notch performance and make big savings. The MM Windrower is a 12 ft. cut machine, easily converted into an 8 ft. cut size. The MM pick-up attachment is built especially for the MM Harvester. It is simple in construction, durably built and highly efficient.

MM Harvestors are light pulling, light running machines, and adapted for ordinary 2-3 plow tractor power. 6 and 8 ft. machines may be operated by power take-off or engine. MM Harvestors have many outstanding features, many patented. Single unit, all steel construction and only two wheels make for less weight, easier handling, and lighter draft. All steel, full rotary, full length, full width straw racks with a pitching, tossing, grain saving motion, separate all grain from the straw. Self leveling cleaning shoe assures a better cleaning job regardless of cutting height on rolling as well as level land. Large size grain tanks are quickly and handily emptied. Roller, bronze and ball bearings used throughout and many are interchangeable. Fewer drives, and all operated by high grade and roller chains.

The MM Harvestors have been proved by thousands of users to give lowest cost harvesting per foot cut, per bushel and per acre. For additional facts on MM Harvestors, see page 3. For description of NEW MM 5 ft. Mighty Master Harvester see back page and page 27.

Get facts now from your MM dealer, and plan to get a better, cleaner, lower cost harvesting job from now on with any MM Harvester.

NEW MIGHTY MASTER—See Page 27

IN 12 FT. AND 8 FT. MM WINDROWERS

12 FT. HARVESTOR WITH PICK-UP

8 FT. HARVESTOR

8 FT.

VESTOR, POWER TAKE-OFF DRIVE

12 FT. HARVESTOR

IN HEAVY DOWN GRAIN

AROUND A TOUGH CORNER—HARVESTOR WITH POWER TAKE-OFF DRIVE

12 FT. HARVESTOR

TO/r--

11/Nov/...

The HEADLINERS



The Universal "R" is proving a real all-purpose tractor for its owners. It is affording perfect Vision and safe, easy handling for all row crop work. It is giving steady, economical power for belt work on thresher, corn Shelter, and hammer mill. And it's being widely used for pulling MM Harvestors. It's become popular, too, for hauling to market, affording safe handling at a good road speed.

The "R" brings to the farmer a wide range of utility and adaptability. And its unusual utility is combined with a new high in tractor comfort. The R's Comfort-Cab affords good protection from dust, dirt, and the elements the year round. You'll be getting a great partner on your farm when you get the Universal "R". See your MM Dealer now.

IT'S HERE—MM's "Mighty Master" Harvester. A 5 ft. Combine that sets a new standard just as the original Harvester did in 1934 and 1935 in the 12 ft. class. Remember, not only were the Harvestors entirely new and different but they weighed nearly a ton less than Harvestors of their size. MM's 5 ft. Harvester's outstanding features are to give you bigger capacity threshing and cleaning under all conditions and a more durable machine to last longer. It's built to pick up windrows as well as to do a better job of straight combining. It is new and it is different, and you will want to see it at your MM dealer's place of business. It has been tried and proved as are all of our MM machines before they are introduced.



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